

CLAIMS

What is claimed is:

- 1 1. A process for polishing wafers comprising:
2 mixing a marker with a slurry to form a slurry mixture;
3 performing chemical mechanical polishing on a wafer using said slurry mixture;
4 rinsing said slurry mixture from said wafer; and
5 checking said wafer for marker residue.
- 1 2. The process in claim 1, wherein said checking comprises illuminating said wafer with a
2 light source and detecting a spectrum of light returned from said wafer.
- 1 3. The process in claim 2, wherein said checking illuminates light to, and detects light from,
2 edges of said wafer.
- 1 4. The process in claim 2, wherein said light source comprises one of a light emitting diode
2 and a laser.
- 1 5. The process in claim 2, wherein said marker has one of a fluorescence and a
2 phosphorescence upon illumination by said light source.

1 6. The process in claim 1, wherein said marker is mixed with said slurry in small enough
2 quantities so as to not affect a polishing capability of said slurry.

1 7. The process in claim 1, wherein said checking comprises residual gas analysis and said
2 marker has a higher vapor pressure than said slurry.

1 8. A process for polishing and cleaning silicon wafers comprising:
2 mixing a marker with a slurry to form a slurry mixture;
3 performing chemical mechanical polishing on a silicon wafer using said slurry mixture;
4 rinsing said slurry mixture from said silicon wafer;
5 checking said silicon wafer for marker residue; and
6 repeating said rinsing process if said checking process detects said marker residue on said
7 wafer.

1 9. The process in claim 8, wherein said checking comprises illuminating said silicon wafer
2 with a light source and detecting a spectrum of light returned from said silicon wafer.

1 10. The process in claim 9, wherein said checking illuminates light to, and detects light from,
2 edges of said silicon wafer.

1 11. The process in claim 9, wherein said light source comprises one of a light emitting diode
2 and a laser.

1 12. The process in claim 9, wherein said marker has one of a characteristic fluorescence and a
2 phosphorescence upon illumination by said light source.

1 13. The process in claim 8, wherein said marker is mixed with said slurry in small enough
2 quantities so as to not affect a polishing capability of said slurry.

1 14. The process in claim 8, wherein said checking comprises reactive gas analysis and said
2 marker has a higher pressure than said slurry.

1 15. A system for chemical mechanical polishing and cleaning a wafer, said system
2 comprising:
3 a slurry mixer adapted to dispense a slurry mixture, wherein said slurry mixture includes
4 a marker;
5 a rotating platen adapted to contact and polish said wafer using said slurry mixture;
6 a rinse dispenser positioned adjacent said wafer and being adapted to rinse said slurry
7 mixture from said wafer; and
8 a detector positioned adjacent said wafer and being adapted to detect marker residue.

1 16. The system in claim 15, further comprising:
2 a slurry supply connected to said slurry mixer and being adapted to supply slurry to said
3 slurry mixer; and

4 a marker supply connected to said slurry mixer and being adapted to supply said marker
5 to said slurry mixer.

1 17. The system in claim 15, further comprising a light source positioned adjacent said wafer
2 and being adapted to illuminate said wafer, wherein said detector comprises a light detector
3 adapted to detect a spectrum of light returned from said silicon wafer.

1 18. The system in claim 17, wherein said light source is positioned to illuminate edges of said
2 wafer and said detector is positioned to detect light returned from said edges of said wafer.

1 19. The system in claim 17, wherein said marker has one of a fluorescence or
2 phosphorescence upon illumination by the light source.

1 20. The system in claim 15, wherein said detector comprises a residual gas analyzer and said
2 marker has a higher vapor pressure than said slurry.